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ABSTRACT

This paper describes the organization, design, and adaptations of the North York's Benchmarks Project (Ontario, Canada). This project began in response to the interests and innovations of several schools within a large school board. Then the project moved to the regional and whole-board level, implemented as a top-down strategy. The term "benchmarks" refers to a measure that represents student learning outcomes at a particular point in time relative to program objectives. The benchmark serves as a point of reference against which future measures of student learning outcomes may be compared to monitor the extent of growth. The project was also intended to support teacher growth and to develop the subject area of focus. Organizational changes occurred as the project grew, including the following: (1) a key staff appointment was made in the board of education; (2) a supervisory officer was appointed to oversee development of the project; and (3) the project became a top priority for the school board. Teacher response to the project at the early stage was negative, reflecting anxiety about the standardized tests. The problem was resolved as the project went on and the teachers became experienced with the process. The top-down directive also acted to change teachers' behavior, as it indicated that teachers had to use the tests, regardless of their attitudes. The issue of teacher information and support needs to be addressed if the project is to continue to meet its objectives. Question and answer sheets describing the Benchmarks Project are included. (LP)

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WHERE WE ARE, WHERE WE ARE GOING, AND HOW WE WILL GET THERE: NORTH YORK'S BENCHMARKS PROCESS[1]

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Overview

During the 1987-88 school year, a family of schools within the North York Board of Education, Toronto, initiated a Benchmarks Project as part of their Excellence in Small Schools program directed at various dimensions of school improvement. The rationale for this project grew out of the work around what makes schools effective and emphasized both academic improvement for students and professional growth for teacher through working together to diagnose and solve problems. Through working with the Benchmarks process, staff are able to affirm practices that are achieving desired outcomes and identify those which require adjustments to allow for improved results. Together, staff define areas of academic strength, diagnose areas in need of further attention, and cooperatively design strategies to address the needs identified.

In early stages, the Benchmarks Project looked very much like a modified effective schools project, with many of the same goals and processes. Teacher reaction to those processes, many of which come out of the context of schooling in the United States, forced adaptation of the project to better address schools in Canada and the ethos of Canadian teachers. As a result, the Benchmarks Project became a reflective process through which teachers, their students, schools, and the Board as a organization changed.

This paper describes the early stages of organization and design related to the Benchmarks Process as well as the adaptations that became part of the process over time. The paper includes comments and reflections of teachers and facilitators. The emphasis of the discussion, however, is not on the Benchmarks Process itself but rather on organizational response to that process as ideas and innovations are adapted through use in differing contexts. The Benchmarks Process began as an "idea" in response to the interests of one sub-set of a larger school Board and then evolved to impact other schools within the Board. As it did so, its organizational shape and structure changed as sheer numbers of schools needed more support and consultation, though the goals of the process remained the same. Effective Schools Models utilize standardized assessment as a means to gather base-line data for measurement of student growth. Ontario schools do not normally use standardized assessment instruments. This in itself opened up a larger question related to organizational process: what is the value of assessment to our work, what kinds of assessments are we comfortable with, what kind is most beneficial to what we want to do? This issue became the cornerstone for adaptation of the Benchmarks Process, adaptation that both individualized the innovation to the context, and addressed the goals of improvement.

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Many organizations take on innovations or "ideas" that have been successful in their place of origin. Transplanting these ideas is not always an easy process, especially when those ideas are multi-dimensional and complex. The North York Benchmarks Process is a case study of one situation where an idea has been followed through and allowed to take its own shape, a shape better designed for the context. The paper describes some of the successes as well as the "pitfalls" that were part of this response: the issue of assessment, finding time for teachers to plan together, gaining acceptance for the project. Most of these "pitfalls" are also common to any implementation project. In providing an example of ways that one School Board addressed these problems to a common goal, it gives impetus and acts as a resource to other contexts with similar agendas.

The Benchmarks Process

The term "Benchmarks" refers to a measure which represents student learning outcomes at a particular point in time relative to program objectives. The benchmark becomes a point of reference against which future measures of student learning outcomes may be compared to monitor the extent of growth. The initial use of "benchmarks" came to be as a means to develop base-line data from which teachers and site-based planning groups could develop interventions to better address student learning related to longer term outcome objectives.

The Benchmarks Process as it was originally envisioned by the Mackenzie Family was a means by which teachers and schools could know that they are making a difference in the area of math, and if not, develop strategies together that could support student growth in any area of difficiency. In the fall of 1988, building on the work begun in the Mackenzie Family, the Western Region Superintendent and Assistant superintendents identified "Benchmarks" as an area of special focus for the Region during 1988-89. The aim of the Benchmarks Project at this point was:

> to assist schools in participating in a process reflecting the Quality Assurance initiative of establishing appropriate standards as consistent measures of student progress and program effectiveness.

As had been the case in the Mackenzie Family, this larger effort included two major areas of emphasis:

> 1) **Tracking**: Teacher tracking of student attainment of subject area goals and outcomes through the development of a criterion referenced test matched to North York curriculum objectives as well as through the use of other formal and informal approaches to assessment in order to track student growth and development in the area of math.
>
> 2) **Support**: The development of teacher strategies related to areas of need determined in the assessment process and support for use of those strategies to improve student outcomes. Site based planning related to student needs and staff development supporting teacher growth and use of new approaches to math are part of this development process.

The Benchmarks Process then has a dual purpose--to find ways to measure students learning outcomes with respect to knowledge and skills using a viriety of assessment measures and to support teacher growth and development in the subject area of focus. The Benchmarks Process began with math but as a model could include any subject area. More formally, the Benchmarks Process builds on the curriculum review process (CRDI), Supervision for Growth and the Quality Assurance model already present in the Board and

is a process in which a group of staff in a school or family of schools examines student learning outcomes through the following steps:

1) **identification** of area to be focus of attention.

2) **measurement** of student learning outcomes related to the area in terms of product (what can students do?) and process (how are they doing it?).

3) **review** assessment indicators to identify areas of strength (what are we doing well) and areas which need attention. Review indludes program delivery strategies, extent to which program objectives are covered, resources and materials required for effective program delivery, and student attitudes toward the topic.

4) develop an action **plan** for addressing needs determined in review of benchmark indicators.

5) **implement** action plan.

6) **re-measure** with respect to improvement in goal areas (attitudes, percent of objectives covered, program delivery strategies, student learning outcomes).

7) **re-examine** results.

Benchmark tests developed by the Board of Education's Research and Development Department and matched to Board curriculum goals are conducted in the fall and spring of the year. Tests are given at grades 4, 6, 8, and 10 in the area of math. Data is presented to the schools in different ways: to individual teachers, to families, to teachers within or across families of schools at a specific grade levels (all grade 4 teachers). Teacher group review sessions are conducted by R&D staff after testing periods. Teachers are expected to use (and receive assistance for) any other types of assessment strategies they see as relevant to understanding their students' work (attitudinal assessments, informal process assessments). Some planning occurs in these review sessions. However, as these are usually short, more effective action planning and interpretation must occur within schools themselves. Teachers receive support from Board program consultants and occasionally from special consultants in the area of math strategies (i.e. Sandy Folk and "Beyond Equity").

In June 1990, the Western Region Administrative Team decided that every school in the former Western Region would participate in the Benchmarks process in the school year 1990-1991. Schools in the Eastern Region of the Board could participate on a voluntary basis. By 1991-1992, 79 schools out of 130 in the North York Board of Education were participating, with 12 to 15,000 Benchmarks tests in math given to students in those schools bi-yearly.

Organizational Supports for Implementation

When the Benchmarks Project moved to include schools outside the Mackenzie Family, a number of organizational developments occurred. The most important of these was the appointment of the former Superintendent of the Mackenzie Family to the position of Director of the North York board of Education as a whole. This gave her policy and administrative support to implement initiatives she felt were important at the system level. Another system level influence was the Ontario ministry of Education's interest in National School Achievement Indicators, a form of national testing, to assess provincial performance on critical learning outcomes. While this is still in early implementation stages

at the provincial level, the fact that it was predicted gave support for the need to look at what testing might mean for the Board and to develop constructive use of test results by teachers.

In regards to Benchmarks, one of the first organizational changes was to appoint a Supervisory Officer to oversee the development of the Project as it progressed through the Board system. Anne Gibson took over the position of superintendent for Benchmarks/Outcomes Projects and as head of a Steering Committee team of supervisory officers, principals, and program coordinators and consultants to problem solve and assist schools with Benchmarks implementation. superintendents, principals, consultants and teachers across the Board were informed as to expectations relating to their roles within the Project, i.e. principals coordinate planning from results; teachers develop strategies to address gaps.

As of 1990-1991 Benchmarks became a top priority for the Board. Schools were expected to include planning from Benchmarks results as part of their strategic plans and as a discussion point for school-based planning. Program consultants developed manipulative materials and workshops to support teachers in new strategies to enhance math performance. The first goal of the project has always been to change the behaviour of teachers in regard to testing through familiarizing them with testing procedures, with the intention of reducing anxiety about testing, and through supporting them in thinking about the meaning of the results in terms of adapting or changing their programs or schools. Therefore, the first top-down "push" on Benchmarks involved the tracking or testing objective. Teachers needed to be convinced that this approach had something to offer them.

Support for Benchmarks has been a part of de-briefing meeting following each testing period. However, teacher interest in support has grown as teacher concern about testing diminished. Board planning for increased support is reflected in the following statement from the "Benchmarks newsletter" implemented by the Steering Committee in December 1991:

> Mathematics has been targetted as a key area for curriculum support accross the board during the 1991/92 school year. To support this initiative considerable funding has been allocated for the purchase of manipulative math materials to support the mathematics programs in our schools and a new mathematics guideline will be introduced. as well, a centrally organized series of workshops has been developed called "Improving Student Outcomes in Mathematics." This is a four part series with separate strands for primary, junior, and intermediate teachers.
>
> The board will also undertake training sessions in family math for parents and teachers during this school year. Program Leaders will continue to respond to requests of superintendents, principals and individual teachers to provide in-class and in-school support and assistance. Each Family of schools will develop a plan for improvement in mathematics and monitor its success.

The longer term intention of the Board is to phase in Benchmarks as a Board-wide process. Targets and standards for mathematics achievement will be set and student progress will be assessed through annual Benchmarks testing. the Baord also intends to develop Benchmarks in Language Arts and will submit proposals to the Ministry of Education in order to participate in the Ministry's Benchmarks Project.

Teacher Response to Benchmarks

Teacher response to the idea of standardized tests was clearly negative in the early stages of the Benchmarks process. Most of the consultation and debriefing work by the Research and Development Department of the Board as well as by the Benchmarks Development team, was centered on reducing teacher anxiety about the tests and how they might be used. Teachers were concerned that this would become a kind of evaluation that would affect their jobs, or that testing would have a negative effect on what they were expected to teach or how they would teach it. This was resolved by a number of factors, the most important of which were time and experience as well as a top-down directive that schools would participate. Board administration felt that in order to change teachers' behaviour related to using the tests as a means to guide program change, teachers just had to do it regardless of their attitude about it.

This did have the desired effect, though it still comes up in schools that have not had much experience with the Benchmarks process. In recent interviews with a small number of teachers about their response to the Benchmarks process, teachers stressed the fact the the Benchmarks process gave them a better sense of what the kids knew and what they had to do to make it better for them. They saw the tests as well developed in terms of the curriculum (one year into the project the R&D staff of the Board, along with teachers, developed a North York version of a Canada-wide test so that it would match the Board's curriculum--this is still being refined). The test was easy to administer and not too difficult for teachers to complete with students. Early in this process, students also had to be trained in test-taking procedures.

The major complaints of teachers related to the process involve the amount of reading the test requires of students, especially students where english may not be their first language, and an increasing need for support and strategies related to working with problem areas that appear in the tests. Teachers feel that in many instances, they have exhausted the strategies they know and to make a difference need more information themselves. Teachers feel that program support is limited--there are not enough consultants to go around and not enought time. As one teacher said, "don't tell us, get involved with us." He would like to have support teams come into the schools and work with individuals in areas that need development. At the moment, the emphasis is still on the testing process more than the support process. Teachers have integrated the testing, though there are still issues to be resolved around that process, but the process itself has opened the door to a need for new information and new strategies. In the case where those strategies were provided through a special program (Beyond Equity), the school made great leaps forward in their test results--and was a school with a more difficult academic population.

Teachers in these interviews asked for: assistance in programming, how to make the best use of information from the tests, more materials, better articulation between tested grades (4, 6, 8, 10) and other grades, more help with how to manage manipulatives, a logical sequence plan for math development, adapted tests for ESL students, family meetings on math strategies, more administrative support, more money for help in high schools, information about approaches to math in different cultures, more parental involvement and information to support math strategies, less large group meetings that are not directed to individual strategies to facilitate work with math in the classroom.

Teachers felt that they understood the testing now. They wanted information in order to really apply themselves to working with the data and felt frustrated in getting that information given limited resources at the Board level for support. Teachers have not organized themselves to find ways to address this themselves, either through school or

family meetings, and said that they felt local administration needed to consider this as a goal for the Benchmarks process in the future.

Discussion

Benchmarks is the implementation of an idea. In that sense it began as a grass roots effort to improve what teachers were doing in the area of math, to develop teacher skills related to planning, program diagnosis, and collaborative problem-solving. When it moved to the regional and whole-board level it was implemented as a top-down strategy for working with math, i.e. the Director of the Board said that school will do this and integrate it into their school planning. Exactly how the school decides to approach planning and the form that these plans take maintains the "bottom-up" or grass roots focus. Implementation often means that top-down and bottom-up approaches act in a complementary fashion in that the Board becomes organized to support implementation and the school uses those resources in ways that are relevant to them. Given the resistance to testing at the start of the Benchmarks process, it is unlikely that much would have been accomplished without a top-down approach. Teacher comments indicate that this "hurdle" has been jumped and that teachers have now moved beyond it to more productive interests, i.e. how they can use this information to improve program, which was one of the original goals of the Benchmarks Project.

This leaves, however, the question of how teachers need for information and support will be addressed. As in the case of the original project, schools where strategies and support are currently available have taken that need on as a local or "grass-roots, bottom-up" effort. The Board has consultants who are willing to provide this kind of information, but these are spread thin and often are not available to do the intensive, one-to one work that more successful teacher development in this area seems to imply. It would seem that one answer to this question lies in the development of school teams to address this and in, as always, local leadership for this directive. One disadvantage of top-down directives is that is can leave teachers and schools in a reactive mode, rather than a pro-active one. The next phase of Benchmarks necessarily needs to address this issue of support in some form, if the project is to continue to develop the skills it described in its objectives.

This initiative is growing through the dynamic of information flow and support inherent in the top-down, bottom-up relationship. New ideas are coming from the school level; development and support for those ideas is being formalized by the administration and the Board. Working with this dynamic requires communication and sensitivity--it easily can become a requirement with only formal response from the school. However, with the proper approach, schools can use this as an opportunity for growth to their own ends. This kind of "evolutionary planning" where directions change as needs arise offers both schools and boards a sense of real progress as real needs are met in the process.

Volume 1, Dec. 1991

THE NORTH YORK MATHEMATICS

BENCHMARK

Benchmarks Questions and Answers

The Minister of Education in Ontario recently confirmed that Ontario students will be participating in the National School Achievement Indicators Program. (National Testing)

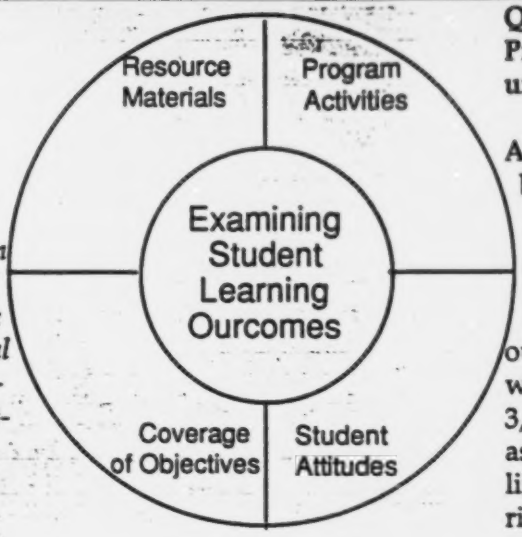
Outlined below are some questions and answers concerning the National School Achievement Indicators Program.

Q. What is the National School Achievement Indicators Program? (NSAIP)

A. The NSAIP is a program which will provide a way for provinces to assess the performance of their education systems in relation to agreed-upon criteria.

Student achievement will be assessed in reading, writing and numeracy for 13- and 16-year-olds.

Assessment instruments are being developed in these areas and will be field tested in the spring of 1992.



Q. How will the assessment instruments be developed?

A. Assessment techniques will respond to current pedagogical practice, including the examination of students' best work in writing, reading and math problem solving.

There will be a process in place to ensure that the testing is in keeping with the curriculum requirements of each province or territory. Each government will set up procedures to review potential test items for relevance to its curriculum and for gender and cultural bias.

Q. What is the Benchmarks Project which the Ministry is undertaking?

A. The Benchmarks Project is being developed to assess provincial performance on critical learning outcomes. Benchmarks are statements of critical learning outcomes that most students will have achieved in grades 3, 6, 9 and 12. Students will be assessed using items that are linked to the provincial curriculum. The data collected as a result of Benchmarks assessment will provide relevant information that reflects the demographic composition within and between boards in Ontario.

Q. Who is responsible for the Benchmarks Project at the Ministry?

A. The Project Director is Burl Summers, former Director of Education for the Hastings Board of Education and the Coordinator of Field Development is Gail Rappolt, Curriculum Superintendent, Hamilton Board of Education. Both of these people have been seconded from their boards to work on the project which is expected to take at least four years to implement.

Q. How will the Benchmarks be developed?

A. Mathematics and Language Arts will be the first benchmarks to be developed. The mathematics benchmarks will be developed by the end of 1992. They will be developed by teams of educators from boards of education across the province who are recognized as mathematics experts in their boards. These benchmarks will reflect the outcomes (knowledge, skills and attitudes) in mathematics for students in grades 3, 6 and 9.

NORTH YORK BENCHMARKS

North York has been in the process of developing benchmarks in Mathematics at the grades 4, 6, 8 and 10 level in response to the direction of the Ministry. Anne Gibson is the Superintendent responsible for Benchmarks/ Outcomes in the board.

Below are her responses to a number of questions about the Benchmarks Process in North York.

Q. What is the North York Benchmarks Process?

A. Testing was conducted in Mathematics at the grades 4,6, 8 and 10 levels in 5 families of schools (West) in 1990-91 using tests developed by teachers and Mathematics experts and based on our North York Mathematics objectives. 53 schools participated in the project.

Research personnel and program leaders worked together to provide workshops for each family of schools following the tabulation of each set of results for both the pre- and post- tests. At each workshop school staffs worked under the direction of the principal to discuss results, establish targets, plans and follow-up activities. Dialogue took place at grade levels, across grades and across panels.

The post-test results reflected the growth in achievement for students in all areas of mathematics for all grades tested. The results also indicated where the greatest growth occurred and areas that still required additional support or innovative teaching strategies.

We are critically interested in assessing both the teaching and the learning in this process. This will lead to curriculum improvement and increased student scores.

Q. How do schools use the Benchmarks results?

A. The Benchmarks results enable teachers, schools and families of schools to focus professional development plans on specific areas in order to enhance results. The assessments can be used to bring about change in what and how mathematical knowledge, skills and concepts are taught.

Q. What are the plans for the North York Benchmarks Process in the 1991/92 school year?

A. The benchmarks testing will continue in the 53 schools involved last year and will begin in an additional 26 schools in the 1990-1991 school year. All test instruments will be based on North York

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and Ministry Mathematics guidelines and will be criteria referenced and developed specifically to reflect North York's curriculum.

The collection and analysis of data will include a broader range of information including gender, country of origin, length of time the student has been in the school system, etc. This will enable us to disaggregate the data in order to have a better picture of the achievements and needs of various groups of students in the board.

Q. How will the board support teachers in the Benchmarks Process?

A. Mathematics has been targetted as a key area for curriculum support across the board during the 1991/92 school year. To support this initiative considerable funding has been allocated for the purchase of manipulative math materials to support the mathematics programs in our schools and a new mathematics guideline will be introduced. As well, a centrally organized series of workshops has been developed called *Improving Student Outcomes in Mathematics*. This is a four part series with separate strands for primary, junior, and intermediate teachers. The board will also undertake training sessions in Family math for parents and teachers during this school year. Program Leaders will continue to respond to requests of superintendents, principals and individual teachers to provide in-class and in-school support and assistance. Each Family of Schools will develop a plan for improvement in mathematics and monitor its success.

Q. What are the long-term plans for the Benchmarks Process in North York?

A. The Benchmarks Process will be phased-in to become a board-wide process. Targets and standards for mathematics achievement will be set and student progress will be assessed through annual Benchmarks testing.

We also intend to develop Benchmarks in Language Arts and will submit proposals to the Ministry of Education in order to participate in the Ministry's Benchmarks Project.

OTTAWA BENCHMARKS CONFERENCE

A conference sponsored by the Ottawa Board of Education in early October of this year brought together educators from across the country to share information and learn about the approaches boards and Minstries of Education are taking to the development of Benchmarks and student learning outcomes.

The data collected from the conference will enable us to ensure that North York's Benchmarks process is in line not only with the Ontario Ministry of Education, but also with the processes established in provinces across the country.

Measurement Tools

The measurement of student outcomes is a key element in the Benchmarks process and there are many different tools one can use to do so. A few examples are listed in the following chart: